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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,023	02/23/2001	Armin Herbert Emil August Olschewski	107775	1361

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EXAMINER

KING, BRADLEY T

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 05/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/700,023

Applicant(s)

Olschewski et al

Examiner

Bradley King

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Feb 23, 2001 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 6, 8 20) ☐ Other:

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DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features of claims 11-12, 14, 22-23, 26-27, and 31-34 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Specification

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

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The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract accompanying the PCT contains legal language such as "means".

The specification lacks section headings. Please correct.

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: claim 24 requires a diamond coating which is not mentioned in the spec..

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 8, 11-12, 14, 22-23, 26-28 and 31-34 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification fails to disclose and adequately support the features of the instant claims. For instance, claim 31 is directed towards a continuously variable transmission. The specification fails to mention this device, and therefore

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fails to enable the invention of claim 31. Claim 28 recites “hard turning”. It is unclear what is meant by this limitation and the specification lacks support for this feature. Claim 8 recites “the screw is rigidly connected to the actuating member”. The disclosed screw appears to be connected through a rotatable bearing, instead of being rigidly connected..

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 6, 18, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 depends from claim 6, making the scope of the claim unclear.

Claim 6 recites “different type”. The claim is indefinite as it is unclear what the word “type” is intended to convey.

Regarding claims 6 and 24, the phrase “such as” renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 8 recites “the screw is rigidly connected to the actuating member”. The meaning of this limitation is unclear as the screw appears to be connected through a rotatable bearing.

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Regarding claim 18, the phrase "e.g." renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 4-7, 9, 13, 15, 21, 25, and 29-30 rejected under 35 U.S.C. 102(b) as being anticipated by Fujita et al.

Fujita et al disclose all the limitations of the instant claims including; a screw actuator having a housing 19, a motor 30, an actuating member 7 or 18, and a screw mechanism which provides a linear movement of the actuating member with respect to the housing in response to a rotational movement of the motor, the screw mechanism comprises a screw 36b, a nut 18 engaging each other by rolling elements 52, the screw being rotatable with respect to the housing, and a reduction gear means, where the nut is fixed with respect to the housing and the screw is rotatably supported with respect to the housing by means of the rolling elements. Note the nut 18 is contained in the housing and fixed against rotation by bearings 26.

Regarding claim 5, the worm gear provides a reduction as well as the ball screw.

Regarding claim 7, the screw engages the actuating member 18 through bearing elements.

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Regarding claim 21, Fujita et al disclose an encoder 42.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-2, 4-9, 13, 16-17, 25, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 97/17553 in view of Taig.

WO 97/17553 discloses an actuator including (see figure 4): a screw actuator having a housing 6, a motor 10, an actuating member 49, and a screw mechanism which provides a linear movement of the actuating member with respect to the housing in response to a rotational movement of the motor, the screw mechanism comprises a screw 51, a nut 52 engaging each other, the screw being rotatable with respect to the housing, where the nut is fixed with respect to the housing and the screw is rotatably supported with respect to the housing by means of the rolling elements. WO 97/17553 lacks rolling elements between the screw and nut and a reduction means. Ball screws are well known in the art to reduce wear and friction, and reduction gearing is well known to increase the actuating force of an actuator. Taig teaches both a ball screw system and a planetary gear reduction which allows for reduced motor size. It

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would have been obvious to a person of ordinary skill in the art at the time the invention was made to include rolling elements in the screw mechanism of WO 97/17553 to reduce friction and wear, increasing the durability of the actuator, and to provide a planetary gear reduction to decrease the requirements of the motor, thereby decreasing size and cost of the actuator.

Regarding claim 2, the pin 53 and slot 54 allow axial movement of the screw.

13. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al in view of Taig.

Fujita et al disclose all the limitations of the instant claims with exception to a planetary gear reduction. Planetary gear reductions are well known in the art such as demonstrated by Taig. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to substitute a planetary gear reduction taught by Taig in place of the worm screw of Fujita et al as an alternate means of gear reduction, allowing an alternate and more compact actuating arrangement.

14. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al.

Fujita et al disclose all the limitations of the instant claim with exception to a coating on the screw mechanism. Wear resistant coatings are well known in the art of bearings to reduce friction and increase the useful life of components. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize a wear resistant coating in the bearing elements of Fujita et al to increase the life and efficiency of the device.

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Allowable Subject Matter

15. Claims 3, 7, 10 and 18-20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kapaan et al, Holding, Blosch et al, Takahashi et al, Miyake et al, Shaw et al, and Crossman. All show actuators.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley King whose telephone number is (703)308-8346.


JACK LAVINDER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3800

BTK

April 24, 2002

4/26/02